



We Solve Problems

A Custom Compounder of Thermoplastic Resin

We Solve Problems

with customized products drawn from one of the broadest portfolios of resins available: from polypropylene to PEEK.

Representing TES:

Tom Drye
Managing Director

Farokh Kheradi
Dir of Operations

Who We Are

Techmer Group



Color
Concentrates

Additive
Concentrates

Custom-
Engineered
Compounds

Color
Compounds

About – Techmer PM

1981 – Techmer PM was formed in in **Los Angeles**. Manufacturer with technical expertise in formulating plastic colorants and additives. A total of six employees were designing, producing, and selling products to the industry.

1987 – Tokyo Printing Ink and Mitsui & Co. of Japan and Sangho Mercantile in Korea became partners with Techmer PM, resulting in the construction and start-up of a plant in **Clinton, Tennessee**, in 1988.

1996 /1997 – Steady growth brought the workforce to over 300 members. Company received international quality certification under the standards of ISO 9001 for the design and manufacture of its products. A production facility was opened in **Gainesville, Georgia**.

2000 – A fourth plant was added in **Wichita, Kansas**.

2003 – A fifth site was added in **Dalton, Georgia**. Total employment exceeded 400. The increasing importance of globalization resulted in a partnership being formed with Guangzhou Eastern Rainbow with operations in China.

2004* – **TES (Detail on next slides)**

2008 – Acquisition of **Accel Color**, adding manufacturing sites in **Naperville (Batavia), Illinois**, and **Avon, Ohio**. An investment was completed to add the latest technology to the Fiber Development Center in Dalton, Georgia.

2009 – Growth of our business in South America led to the opening of an office in **Sao Paulo, Brazil**, in 2009.

2010 – It was announced that BASF had agreed to sell its hydrophilic melt additives business to Techmer PM.

TPM Core Competencies

- Color
 - Proprietary process for organic dispersions
 - Formulation know-how
 - High performance
- Additives
 - Property modification
 - UV, FR, AS, PA, etc.
 - Synergy know-how
- Technical support
 - Problem solving
 - Understanding the chemistry
 - Industry experience,
- Quality
 - Value driven
 - Variation control
 - People commitment.

TPM End-Use Applications



Packaging



Fiber



Automotive



Ribbon



Profile Extrusions



Film



Non-Wovens



TES Engineered
Plastics

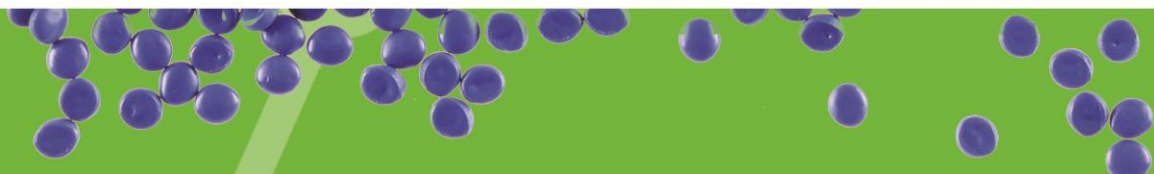
About – Techmer ES



2004 – Techmer PM entered the engineering plastics market acquiring the specialty compounds business in North America from Netherlands-based DSM, and a new production unit was launched at our Tennessee site in 2005 to support this business.

2012 – The engineering plastics venture was renamed **Techmer Engineered Solutions (TES)**. A new production unit was launched at our California site in 2012 to support west coast business.

2013 – The assets of **TP Composites** were acquired in Aston, Pennsylvania. This business significantly expanded our engineering plastics market position, and it was merged into our TES business.



About – Techmer TES

- Founded in 2004
- ~Eighty employees
- Part of Techmer PM - (>600 employees) with shared resources
- Three TES U.S. production sites
- Single and twin screw extruders
- Global presence
- ISO 9001-2008 certified
- ISO 17025-2005 (A2LA) accredited testing lab
- Sales growth averaging >15%

TES Statistics

- Produce 8.0MM Lbs / Yr (Plastic pellets)
- Employees
 - | | <u>Startup</u> | <u>3 year</u> |
|------------|----------------|---------------|
| – Total | 76 | 90 |
| – DE Plant | 54 | 70 |
| – # lines | 7 | 10 |
- 3 shifts, 5 days /week. Occasional weekends.
- Sunday 11:00PM to Friday 11:30PM

TES Statistics cont,

- Average lot size, 3,000 Lbs
- Average up time 65%
- PA state approved safety committee
- ISO 9001:2008 certified
- ISO17025 (A2LA) lab certified
- Lean MFG
- Sustainability

About – Techmer TES

- 29% of sales dollars are from products less than two years old
- Five to seven new products/month
- 55 Lb minimum order quantities
- Typical # of lots per customer/year: 7
- > 4000 sku's
- Direct and distribution sales channels to customers
- Technical field engineers focused OEM application development

National manufacturing presence



Clinton, TN Site



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Our Strengths

Speed to Market

- Quick sample turnaround
- Immediate technical solutions
- Rapid serve

Flexibility

- 55 lb. up to truckload
- Custom formulations
- Choice of resins and additives

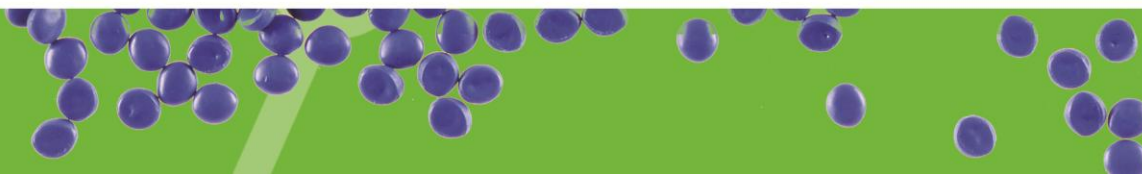
Technology

- State-of-the-art technology
- Cost-effective solutions
- Extensive industry experience
- Resources

Total Systems Approach

- Support at design phase
- Material choices
- Technical support
- Manufacturing and delivery

Strategic Resin Partnerships



TES Product Lines

ELECTRAFIL®

- Conductive
- Static dissipation
- EMI/RFI shielding

HIFILL®

- High strength
- Heat resistance
- Custom color
- High stiffness
- Impact resistance
- Medical grades

HIFILL FR®

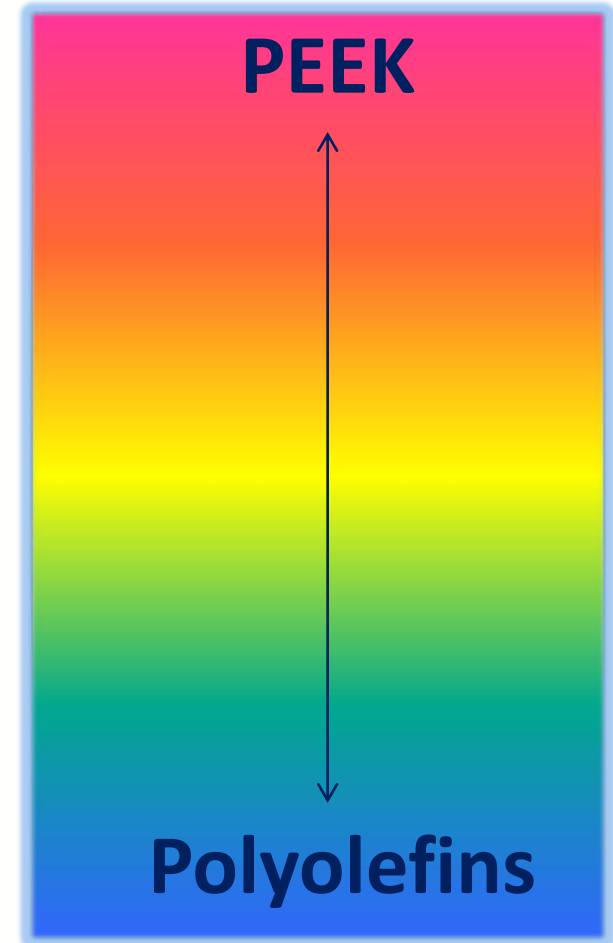
- HIFILL ++++
- UL 94
- UL yellow card

PLASLUBE®

- Internally lubricated products
- Wear resistance
- Low coefficient of friction

Typical Resins

- Amorphous
 - ABS
 - SAN
 - Polystyrene
 - PC
 - PC/ABS
 - PEI
 - PSU & PPSU
 - PES
 - Amorphous nylon
 - PPO
- Crystalline
 - PE/PP
 - Nylon family
 - Acetal
 - PEEK
 - PPS
 - PPA
 - PBT
 - UHMW-PE
 - PUR



Functional Additives

Conductive Additives

- Carbon fiber
- Carbon black
- Stainless steel

Wear and Friction Additives

- PTFE
- Silicon
- Aramid
- MoS₂
- Carbon fiber
- PFPE

Flame Retardants

- Non-halogenated
- Eco friendly
- REACH compliant

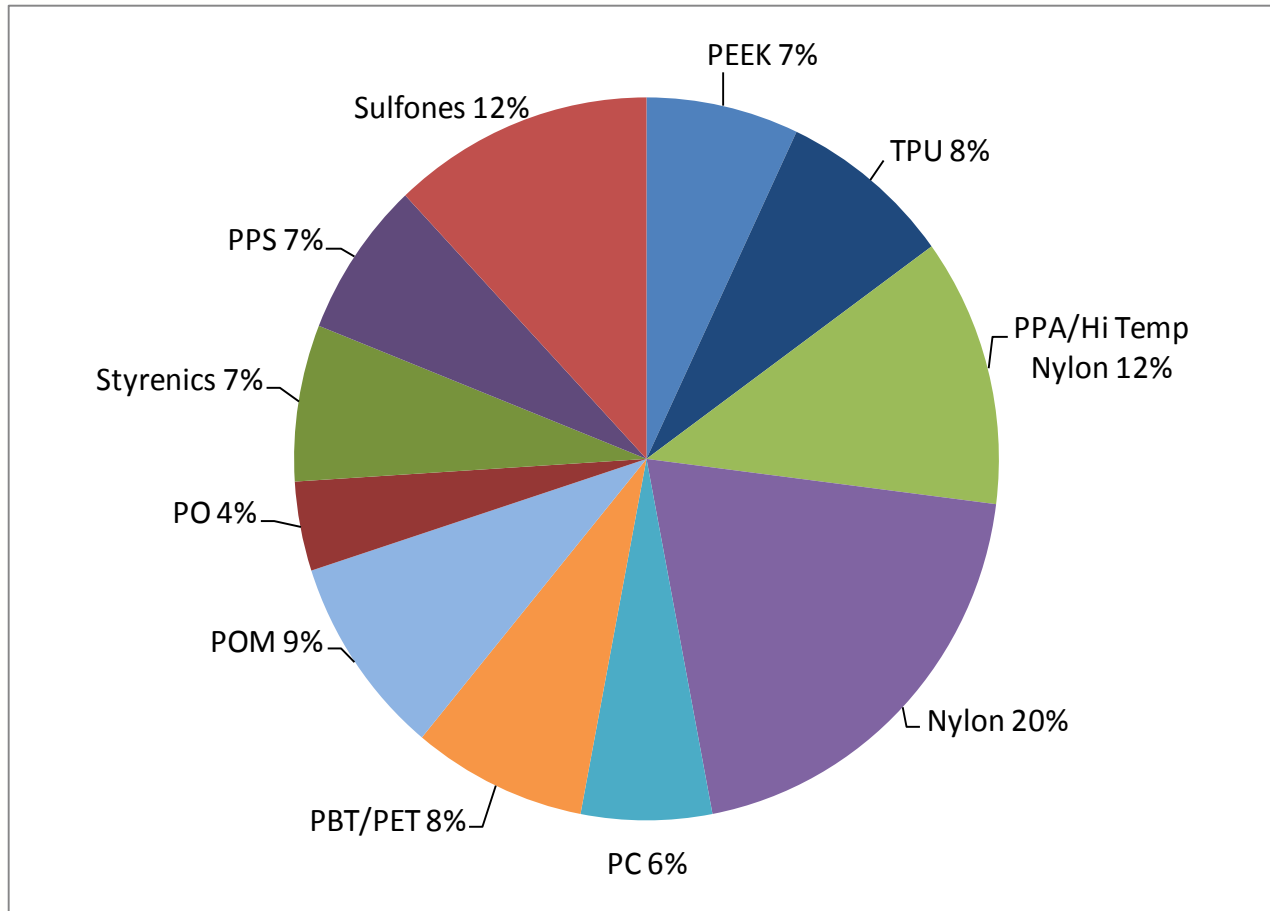
Structural

- Glass fiber
- Carbon fiber
- Dimensional additives

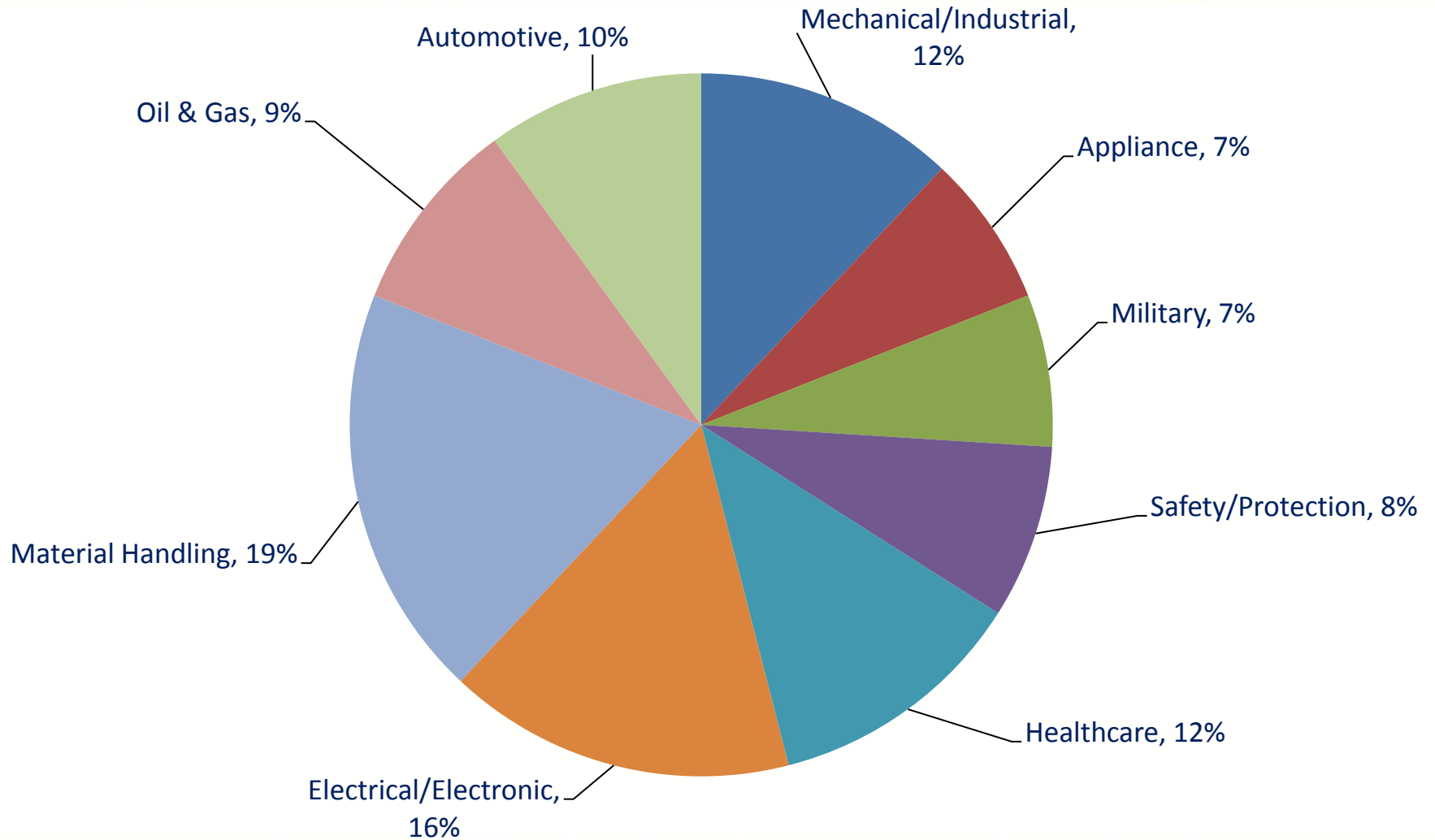
Stabilizers

- UV
- Thermal stabilizer
- O₂ scavenger

Resin Mix



Markets



Common Applications

ELECTRAFIL®

- Fuel line clips
- Data storage
- Printer parts
- EKG contacts

PLASLUBE®

- Gears
- Chain tensioners
- Pulleys
- Bearings

HIFILL®

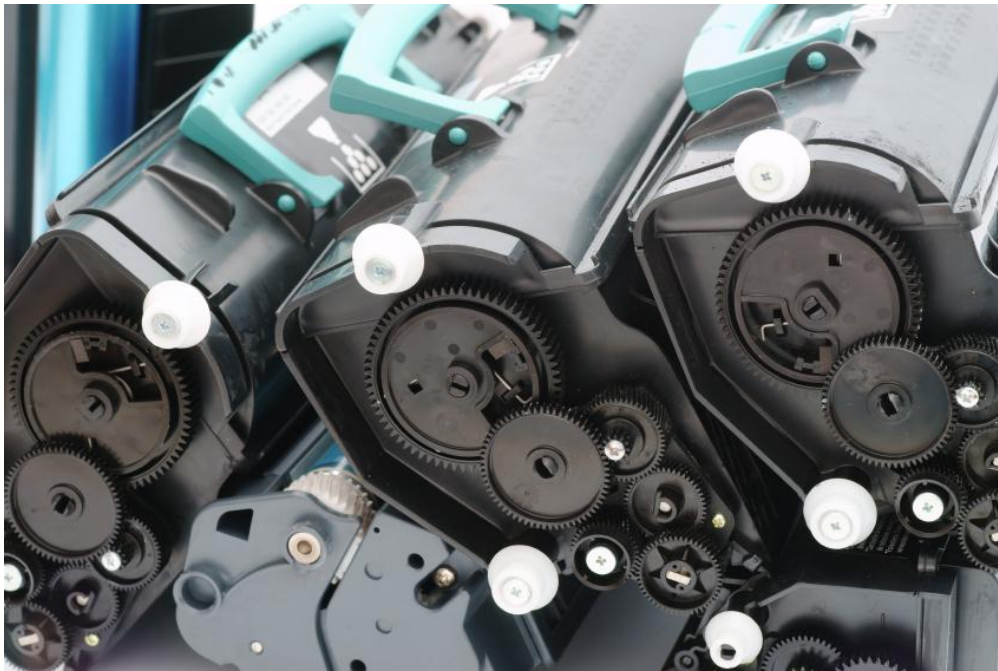
- Structural and high density
- HH paint systems
- Autoclavable
- Housings/Bezels

HIFILL® FR

- Connectors
- Flame retardants

ELECTRAFIL® Application Requirements

- Electrically conductive
- Chemical resistant
- Wear resistant
- Dimensionally stable



PLASLUBE®



How to select lubricated materials for
wear applications

PLASLUBE® Application Requirements

- Flexibility
- Wear resistance
- Low friction
- Low moisture

Solution:
PLASLUBE NY-4/M/2



Control cables, inner liner

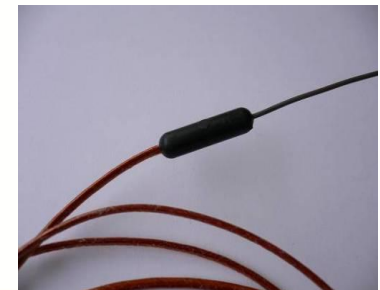
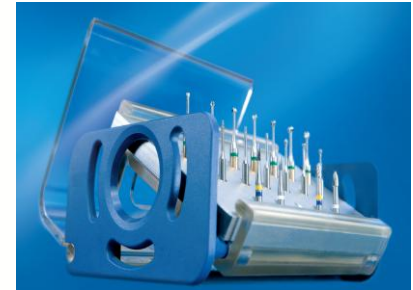
Markets and Products

- Medical
 - Syringes, pipettes
 - Lab slide
- Sporting goods
 - Sunglasses
- Office furniture
 - Steelcase, others

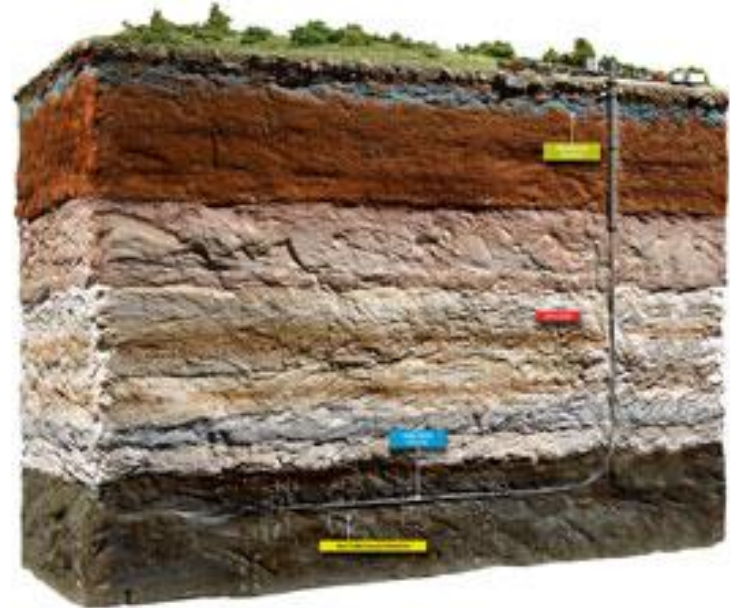


Medical Applications

- Drug delivery
- Housings
- Autoclaveables
- EMI shielding
- Anti-stat
- Custom color
 - PPSU colors
 - ISO 10993-approved



Oil & Gas



Complete Product Portfolio



Shelby Cobra Collaborative Team



CINCINNATI BUILT
CINCINNATI STRONG



U.S. DEPARTMENT OF
ENERGY



(POTUS & VPOTUS visit Techmer 1-9-15)

Unexpected Result





Thank You

We look forward to calling DE home.